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**Task 1 - Energy auditing a computer system & recommend how sustainability can be integrated into an upgrade**



Instruction

• Gather information to prepare the installation of an energy measuring device on a computer system

• Prepare for the installation of the device

• Configure and test the device

• Complete and document installation and test results

• Evaluate opportunities to integrate sustainable ICT projects and reduce energy consumption

**Project Resources**

Current Cost EnviR Energy Monitor

Warning: Installation is simple yet if you are in Australia, for liability reasons it is required to be carried out by a qualified electrician when in in a power switchboard.

* <http://www.smartnow.com.au/installinstructions.php>
* <http://www.smartnow.com.au/current_cost_bridge.php>

**Theory**

Complete the following notes:

1. Q: Does the Current Cost EnviR Energy Monitor comply with Electrical Safety Standards?

ANSWER: Yes

1. Advise how you prepared the installation of Current Cost EnviR Energy Monitor

ANSWER: The units’ sensor must go around the positive power wire only so a special lead was prepared so as to perform the testing.

1. Advise how you configured and tested the Current Cost EnviR Energy Monitor

ANSWER: Each device was individually tested first then over all measurement was taken to confirm the figures totalled correctly.

1. Advise how you could document the installation and energy audit

(see <http://my.currentcost.com/>)

ANSWER: A daily/weekly/monthly record is kept to discover peaks and troughs of power usage. Some services and or programs could be then adjusted to run in off peak where power usage is cheaper.

**Practicum**

* **Identify power consumption of a computer system under different operating conditions using the Current Cost EnviR Energy Monitor and appropriate power lead or similar energy meter.**
* **Recommendations on upgrading computer system.**

1. Record power consumption and notes e.g. range, variability, operating conditions:

|  |  |  |
| --- | --- | --- |
| **Condition**  **WEB CLIENT TESTED** | **PC power consumption**  **(watts)** | **Notes** |
| **OFF** | 0.27 | Tested twice with same result |
| **MAX BOOT** | 5.1 |  |
| **IDLE** | 3.4 |  |
| **Wordprocessing** | 5.1 |  |
| **Spreadsheets** | 5.1 |  |
| **Web browsing**  <http://news.bbc.co.uk/2/hi/programmes/click_online/default.stm> | 4.6 |  |
| **Low level music**  <http://grooveshark.com/#/s/Fall+At+Your+Feet/3KIZB0?src=5> | 5.2 | Streaming Music |
| **Low level video**  <http://www.joost.com/39w1yk49/#/?video_info=33p1yw1t> | 6.7 | Streaming video |
| **Switch tested** | 11 |  |
| **Monitor tested** | 21 |  |

1. Evaluate the extent to which sustainability could be integrated into an upgrade of the computer system. Advise your recommendations:

The web client has the benefit of having the software stored externally and is supported by the supplier.

A major upgrade would be the use of low watt rated monitor as the one use during testing consumed 21 watts. There are Samsung USB monitors that are as 6 watts available.

An option of a more power friendly switch is also a suggestion. The switch tested was a couple of years old, newer devices use eco switching and consume less power.